

Attorney Docket No.: UMD-0112  
Inventors: Alland and Hazbón  
Serial No.: 10/540,460  
Filing Date: January 17, 2006  
Page 4

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): ~~An~~ A modified amplification refractory mutation (ARMS) assay for detecting a single nucleotide polymorphism in an organism, said assay comprising:

amplifying a short amplicon consisting of 30 to 90 base pairs of a nucleic acid molecule of an organism using a hairpin shaped primer that discriminates between different alleles by situating its 3' nucleotide at the location of a single nucleotide polymorphism; and

measuring threshold cycle or amplification efficiency or amount of amplified product wherein a lower amplification efficiency or delayed threshold cycle or a difference in the amount of amplified product as compared to amplification efficiency or threshold cycle or amount of amplified product in a reaction containing ~~primer-template matches~~ a hairpin primer and a template with no mismatches is indicative of a mismatch between the primer and the nucleic acid molecule of the organism and a single nucleotide polymorphism in the organism.

Claim 2 (currently amended): The assay of claim 1 wherein the 30 to 90 base pair long amplicon of the nucleic acid ~~sequence~~ molecule of the organism is amplified by PCR.

Claim 3 (original): The assay of claim 2 wherein the PCR performed is real-time PCR.

Attorney Docket No.: **UMD-0112**  
Inventors: **Alland and Hazbón**  
Serial No.: **10/540,460**  
Filing Date: **January 17, 2006**  
Page 5

Claim 4 (previously presented): The assay of claim 2 wherein amplicon production is measured at the completion of amplification by PCR.

Claim 5 (original): The assay of claim 1 wherein the hairpin shaped primer comprises DNA.

Claim 6 (original): The assay of claim 1 wherein the hairpin shaped primer comprises RNA.

Claim 7 (original): The assay of claim 1 wherein the hairpin shaped primer comprises PNA.

Claims 8-11 (canceled)